

## APPENDIX C

### SAMPLE PERFORMANCE MEASURES

#### Sample Performance Measures

This, which is a collection from several sources, is included to stimulate your thinking about appropriate measures. However, remember that the measures you select should fit the process, products, and goals.

##### A. Accounting Performance Measurements

Percent of late reports	Percent of errors in reports
Errors in input to Information Services	Errors reported by outside auditors
Percent of input errors detected	Number of complaints by users
Number of hours per week correcting or changing documents	Number of complaints about inefficiencies or excessive paper
Amount of time spent appraising/correcting input errors	Payroll processing time
Percent of errors in payroll	Length of time to prepare and send a bill
Length of time billed and not received	Number of final accounting jobs rerun
Number of equipment sales miscoded	Amount of intra-Company accounting bill-back activity
Time spent correcting erroneous inputs	Number of open items
Percent of deviations from cash plan	Percent discrepancy in MRB and line scrap reports
Travel expense accounts processed in three days	Percent of advances outstanding
Percent data entry errors in accounts payable and general ledger	Credit turnaround time
Machine billing turnaround time	Percent of shipments requiring more than one attempt to invoice
Number of untimely supplier invoices processed	Average number of days from receipt to processing

##### B. Clerical Performance Measurements

Misfiles per week	Paper waste
Errors per type page	Administration errors (not using the right procedure)
Number of times messages are not delivered	Percent of action items not done on schedule
Percent of inputs not received on schedule	Percent of coding errors on time cards
Period reports not completed on schedule	Percent of phone calls answered within two rings
Percent of phone calls dialed correctly	Pages processed error-free per hour
Clerical personnel/personnel support	Percent of pages retyped
Percent of impressions reprinted	

## APPENDIX C

### SAMPLE PERFORMANCE MEASURES

#### C. Product/Development Engineering Performance Measurements

Percent of drafting errors per print	Percent of prints released on schedule
Percent of errors in cost estimates	Number of times a print is changed
Number of off-specifications approved	Simulation accuracy
Accuracy of advance materials list	How well the product meets customer expectations
Field performance of product	Percent of error-free designs
Percent of errors found during design review	Percent of repeat problems corrected
Time to correct a problem	Time required to make an engineering change
Percent of reports with errors in them	Data recording errors per month
Percent of evaluations that meet engineering objectives.	Percent of special quotations that are successful
Percent of test plans that are changed (change/test plan)	Number of meetings held per quarter where quality and defect prevention were the main subject
Person-months per released print	Percent of total problems found by diagnostics as released
Number of problems that were also encountered in previous products	Cycle time to correct customer problem
Number of errors in publications reported from the plan and field	Number of products that pass independent evaluation error-free
Number of misused shipments of prototypes	Number of unsuccessful pre-analyses
Number of off-specifications accepted	Percent of requests for engineering action open for more than two weeks
Number of days late to pre-analysis	Number of restarts of evaluations and tests
Effectiveness of regression tests	Number of days for the release cycle
Percent of corrective action schedules missed	Percent of bills of material that are released in error
Cost of input errors to the computer	Cost of engineering changes per month
Spare parts cost after warranty	Customer cost per life of output delivered

#### D. Finance Performance Measurements

Percent error in budget predictions	Computer rerun time due to input errors
Percent of financial reports delivered on schedule	Number of record errors per employee
Percent of error-free vouchers	Percent of bills paid so Company gets price break
Percent of errors in checks	Entry errors per week
Number of payroll errors per month	Number of errors found by outside auditors
Number of errors in financial reports	Percent of errors in travel advance records
Percent of errors in expense accounts detected auditors	Computer program change cost

## APPENDIX C

### SAMPLE PERFORMANCE MEASURES

#### E. Industrial/Plant Engineering Performance Measurements

Percent of facilities on schedule	Percent of manufacturing time lost due to bad layouts
Percent of error in time estimates	Percent of error in purchase requests
Hours lost due to equipment downtime	Scrap and rework due to calibration errors
Repeat call hours for the same problem	Changes to layout
Percent deviation from budget	Percent variation to cost estimates
Number of unscheduled maintenance calls	Percent of equipment maintained on schedule
Number of hours used on scheduled maintenance	Accuracy of assets report
Percent of equipment overdue for calibration	Number of industrial design completions past due
Percent of total floor space devoted to storage	Number of errors found after construction had been accepted by the company
Number of mechanical/functional errors in industrial design artwork	Maintenance cost/equipment cost
Percent of engineering action requests accepted	

#### F. Forecasting Performance Measurements

Number of upward pricing revisions per year	Number of project plans that meet schedule, price, and quality
Percent error in sales forecasts	Number of forecasting assumption errors
Number of changes in product schedules	

#### G. Information Systems Performance Measurements

Keypunch errors per day	Input correction on data entry
Reruns caused by operator error	Percent of reports delivered on schedule
Errors per thousand lines of code	Number of changes after the program is coded
Percent of time required to debug programs	Number of cost estimates revised
Percent error in forecast	Percent error in lines of code required
Number of coding errors found during formal testing	Number of test case errors
Number of test case runs before success	Number of revisions to plan
Number of documentation errors	Number of revisions to program objectives
Number of errors found after formal test	Number of error-free programs delivered to customer
Number of process step errors before a correct package is ready	Number of revisions to checkpoint plan
Number of changes to customer requirements	Percent of programs not flow-diagrammed
Percent of customer problems not corrected per schedule	Percent of problems uncovered before design release
Percent change in customer satisfaction survey	Percent of defect-free artwork
System availability	Terminal response time
Mean time between system IPL's	Mean time between system repairs
Time before help calls are answered	Rework costs resulting from computer program

## APPENDIX C

### SAMPLE PERFORMANCE MEASURES

#### H. Legal Performance Measurements

Response time on request for legal opinion	Time to prepare patent claims
Percent of cases lost	

#### I. Management Performance Measurements

Security violations per year	Percent variation from budget
Percent of target dates missed	Percent personnel turnover rate
Percent increase in output per employee	Percent absenteeism
Percent error in planning estimates	Percent of output delivered on schedule
Percent of employees promoted to better jobs	Department morale index
Percent of meetings that start on schedule	Percent of employee time spent on first-time output
Number of job improvement ideas per employee	Ratio of direct to indirect employees
Increased percent of market	Return of investment
Percent of appraisals done on schedule	Percent of changes to project equipment required
Normal appraisal distribution	Percent of employee output that is measured
Number of grievances per month	Number of open doors per month
Percent of professional employees active in professional societies	Percent of managers active in community activities
Number of security violations per month	Percent of time program plans are met
Percent of documents that require two management	Percent of employees who can detect and repair their own errors
Percent of delinquent suggestions	Improvement in opinion surveys
Number of decisions made by higher-level management than required by procedures	Percent of time cards that have errors on them signed by managers
Percent of employees taking higher education	Number of damaged equipment and property reports
Number of employees dropping out of classes	Percent error in personnel records
Improvement in customer satisfaction survey	Volume actual versus planned
Revenue actual versus plan	Percent of procedures less than 10 pages
Number of procedures with fewer than three acronyms and abbreviations	Number of formal reviews before plans are approved
Percent of employees active in improvement teams	Number of hours per year of career and skill development training per employee
Number of user complaints per month	Number of variances in capital spending
Percent revenue/expense ratio below plan	Percent of executive interviews with employees
Percent of departments with disaster recovery plans	Percent of appraisals with quality as a line item that makes up more than 30 percent of the evaluation
Percent of employees with development plans	Direct/indirect ratio
Revenue generated over strategic period	Number of iterations of strategic plan

## APPENDIX C

### SAMPLE PERFORMANCE MEASURES

#### I. Management Performance Measurements (continued)

Number of employees participating in cost effectiveness	Dollars saved per employee due to new ideas and/or methods
Result of peer reviews	Number of tasks for which actual time exceeded estimated time
Data integrity	Warranty costs
Cost of poor quality	

#### J. Manufacturing and Test Engineering Performance Measurements

Percent of process operations where sigma limit is within engineering specification	Percent of tools that fail certification
Percent of tools that are networked due to design errors	Number of process changes per operation due to error
Percent error in manufacturing costs	Time required to solve a problem
Number of delays because process instructions are wrong or not available	Percent error in test equipment and tooling budget
Number of errors in operator training documentation	Percent of errors that escape the operator's detection
Percent of testers that fail certification	Percent error in yield projections
Percent error in output product quality	Percent of designed experiments that need to be revised
Percent of changes to process specifications during process design review	Percent of equipment ready for production on schedule
Percent of meetings starting on schedule	Percent of drafting errors found by checkers
Percent error in yield projections	Percent of manufacturing used to screen products
Number of problems that the test equipment cannot detect during manufacturing cycle	Percent correlation between testers
Number of waivers to manufacturing procedures	Percent of tools and test equipment delivered on schedule
Percent of tools and test equipment on change level control	Percent functional test coverage of products
Percent projected cost reductions missed	Percent of action plan schedules missed
Equipment utilization	In-process yields
Labor utilization index	Asset utilization

## APPENDIX C

### SAMPLE PERFORMANCE MEASURES

#### K. Manufacturing/Shipping Performance Measurements

Complaints on shipping damage	Percent of parts not packed to required specifications
Percent of output that meets customers orders and engineering specifications	Suggestions per employee
Percent of jobs that meet cost	Percent of jobs that meet schedule
Percent of product defect-free at measurement operations	Percent of employees trained to do the job they are working on
Accidents per month	Performance against standards
Percent of utilities left improperly running at end of shift	Percent unplanned overtime
Number of security violations per month	Percent of time log book filled out correctly
Time and/or claiming errors per week	Time between errors at each operation
Labor utilization index	Percent of operators certified to do their job
Percent of shipping errors	Defects during warranty period
Replacement parts defect rates	Percent of products defective at final test
Percent of control charts maintained correctly	Percent of invalid test data
Percent of shipments below plan	Percent of daily reports in by 7 a.m.
Percent of late shipments	Percent of products error-free at final test
Scrap and rework cost	

#### L. Personnel Performance Measurements

Percent of employees who leave during the first year	Number of days to answer suggestions
Number of suggestions resubmitted and approved	Turnover rate due to poor performance
Number of grievances per month	Percent of employment requests filled on schedule
Number of days to fill an employment request	Time to process an applicant
Average time a visitor spends in lobby	Time to get security clearance
Time to process insurance claims	Percent of employees participating in company-sponsored activities
Percent of complaints about salary	Percent of personnel problems handled by employees' managers
Percent of employees participating in voluntary health screening	Percent of offers accepted
Percent of retirees contacted yearly by phone	Percent of training classes evaluated excellent
Percent deviation to resource plan	Wait time in medical department
Number of days to respond to applicant	Percent of promotions and management changes publicized
Percent of error-free newsletters	Personnel cost per employee
Cost per new employee	Management evaluation of management education courses
Opinion survey ratings	

## APPENDIX C

### SAMPLE PERFORMANCE MEASURES

#### M. Procurement/Purchasing Performance Measurements

Percent of discount orders by consolidating	Errors per purchase order
Number of orders received with no purchase order	Routing and trace errors per shipment
Percent of supplies delivered on schedule	Percent decrease in parts cost
Expediteurs per direct employees	Number of items on the hot list
Percent of suppliers with 100 percent lot acceptance for one year	Labor hours per \$10,000 purchases
Purchase order cycle time	Number of times per year line is stopped due to lack of supplier parts
Percent of parts with two or more suppliers	Average time to fill emergency orders
Average time to replace rejected lots with good parts	Percent of lots received on line late
Time to answer customer complaints	Percent of phone calls dialed correctly
Percent of purchase orders returned due to errors or incomplete description	Percent of defect-free supplier model parts
Percent projected cost reductions missed	Time required to process equipment purchase orders
Number of items billed but not received	Stock costs
Supplier parts scrapped due to engineering changes	Parts costs per total costs.
Actual purchased materials cost per budgeted cost	Cost of rush implants

#### N. Production Control Performance Measurements

Percent of late deliveries	Percent of errors in stocking
Number of items exceeding shelf life	Percent of manufacturing jobs completed on schedule
Time required to incorporate engineering changes	Percent of errors in purchase requisitions
Percent of products that meet customer orders	Inventory turnover rate
Time that line is down due to assembly shortage	Percent of time parts are not in stock when ordered from common parts crib
Time of product in shipment	Spare parts availability in crib
Percent of stock errors	Percent of errors in work in process records versus audit data
Number of bill of lading errors not caught in shipping	Cost of rush shipments
Cost of inventory spoilage	

## APPENDIX C

### SAMPLE PERFORMANCE MEASURES

#### O. Quality Assurance Performance Measurements

Percent error in reliability projections	Percent of product that meets customer expectations
Time to answer customer complaints	Number of customer complaints
Number of errors detected during design and process reviews	Percent of employees active in professional societies
Number of audits performed on schedule	Percent of QA personnel to total personnel
Percent of quality inspectors to manufacturing directs	Percent of QE's to product and manufacturing engineers
Number of engineering changes after design review	Number of process changes after process qualification
Errors in reports	Time to correct a problem
Percent of suppliers at 100 percent lot acceptance for one year	Percent of lots going directly to stock
Percent of problems identified in the field	Variations between inspectors doing the same job
Percent of reports published on schedule	Number of complaints from manufacturing management
Percent of field returns correctly analyzed	Time to identify and solve problems
Percent of lab services not completed on schedule	Percent of improvement in early detection of major design errors
Percent of errors in defect records	Number of reject orders not dispositioned in five days
Number of customer calls to report errors	Number of committed supplier plans in place
Percent of correlated test results with suppliers	Receiving inspection cycle time
Number of requests for corrective action being processed	Time required to process a request for corrective action
Number of off-specifications approved	Percent of part numbers going directly to stock
Number of manufacturing interruptions caused by supplier parts	Percent error in predicting customer performance
Percent product cost related to appraisal scrap and rework	Percent skip lot inspection
Percent of qualified suppliers	Number of problems identified in-process
Cost of scrap and rework that was not created at the rejected operation	Level of customer surveys

#### P. Security/Safety Performance Measurements

Percent of clearance errors	Time to get clearance
Percent of security violations	Percent of documents classified incorrectly
Security violations per audit	Percent of audits conducted on schedule
Percent of safety equipment checked per schedule	Number of safety problems identified by management versus total safety problems identified
Safety accidents per 1000,000 hours worked	Safety violations by department
Number of safety suggestions	Percent of sensitive parts located